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Construction Management Evaluation and Project Management Conference Manual

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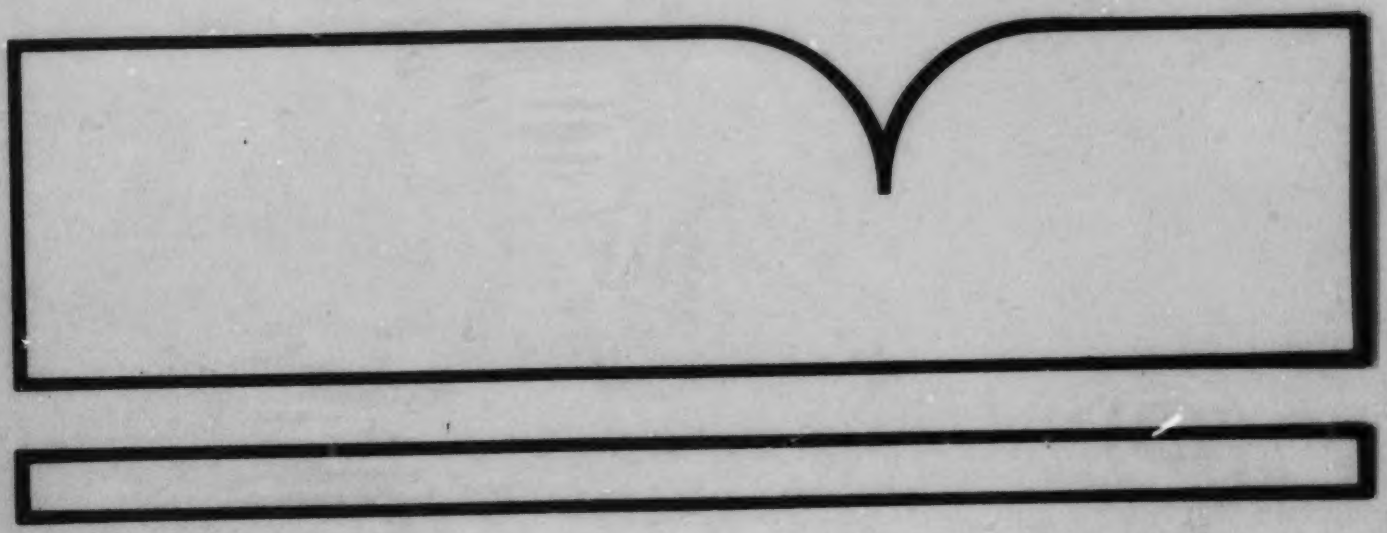

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The purpose of this manual is to provide detailed guidance on conduct of Project Mangement Conferences (PMC) and Construction Management Evaluations (CME). These site visits are intended to enhance EPA oversight and improve local construction grant management.

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CONSTRUCTION MANAGEMENT EVALUATION AND PROJECT MANAGEMENT CONFERENCE MANUAL

Construction Grants Program
Municipal Wastewater
Treatment Works

SEPTEMBER 1983

Municipal Construction Division
Office of Water Program Operations
Office of Water

U.S. Environmental Protection Agency
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CONTENTS

CHAPTER I	GENERAL	I-1
	A. PURPOSE	I-1
	B. REFERENCES	I-1
	C. DISCUSSION	I-I
CHAPTER II.	PROJECT MANAGEMENT CONFERENCE	II-1
	A. GRANT MANAGEMENT	II-1
	B. CONSTRUCTION MANAGEMENT	II-1
CHAPTER III.	CONVENTIONAL CME	III-1
	A. GRANT MANAGEMENT	III-1
	B. CONSTRUCTION MANAGEMENT	III-3
	C. GRANTEE EXIT BRIEFING	III-7
CHAPTER IV.	EXTENDED CME	IV-1
	A. GENERAL	IV-1
	B. GRANT MANAGEMENT	IV-1
	C. CONSTRUCTION MANAGEMENT	IV-3
	D. GRANTEE EXIT BRIEFING	IV-5
CHAPTER V.	THE REPORT	V-1
	A. GENERAL	V-1
	B. INTRODUCTION	V-1
	C. GRANT MANAGEMENT	V-1
	D. CONSTRUCTION MANAGEMENT	V-2
	E. ACTION ITEMS	V-2
	F. CONCLUSION	V-3

APPENDICES

Appendix A - Grantee Notification Package
Appendix B - Typical Report Outline
Appendix C - Financial Management Checklist
Appendix D - Construction Checklist
Appendix E - Construction Records Checklist

I. GENERAL

A. Purpose

The purpose of this manual is to provide detailed guidance on conduct of Project Management Conferences (PMC) and Construction Management Evaluations (CME). These site visits are intended to enhance EPA oversight and improve local construction grant management.

B. REFERENCE:

1. 40 CFR Parts 22, 23, 30, 33, 34 and 35.
2. EPA Handbook of Procedures (Third Edition).
3. EPA Construction Grants 1984 (CG84).
4. ER 415-2-4, Corps Support of EPA Construction Grants Program, October 1, 9183.
5. EPA Regional Guidance Documents.
6. EPA/Corps of Engineers Interagency Agreement.
7. EPA/Corps Regional Agreements.
8. State Delegation Agreement.
9. EPA Construction Inspection Guide (1976, 3 volumes).
10. (EPA) Management of Construction Change Orders-- A Guide for Grantees (1983).
11. (EPA) Accounting Guide for Construction Grants (October, 1977).
12. EPA Operating Procedures for Monitoring Construction Activities (1983).

C. DISCUSSION:

The PMCs are conducted after award of the construction contract and preferably before initiation of construction. The PMC is intended to enhance the grantee's capability to complete the treatment works in accordance with the grant documents and applicable regulations. Typically, this conference will include guidance to grantees on record-keeping requirements, construction management techniques and overall grant management procedures.

The duration of the PMC should not exceed 2 or 3 days and be conducted on virtually all Step 3 and Step 2+3 projects with the possible exception of grantees with demonstrated competence in project management.

The PMC may be conducted by either the State or the Corps of Engineers (CoE) depending upon the capability and desires of the State. In those cases where the CoE has been phased out of a particular State and the State cannot conduct the PMC's, the Region will arrange for the CoE to do so. This conference may be conducted by one or more persons, depending on the size and complexity of the project.

The conventional CME is a four to five day review conducted during construction by the Regional Offices, preferably at the 40-60 percent stage, to evaluate the grantee's grant management procedures, and through this process gain insight into overall program management. The CME should be held during the 20-40 percent completion stage, if a PMC was not conducted.

An extended CME is a five to ten day in-depth review conducted on large multi-contract projects. These reviews will generally be initiated by the Regional Offices and fully coordinated with the State agencies. Team members should be experienced in this type of review and fully knowledgeable of EPA regulations and policies.

Typically, the on-site CME will be conducted by three or more members composed of Personnel from the EPA Regional Office (team leader), the State Agency and the CoE. It is important that the team leader be familiar with all grant requirements and relevant EPA regulations. The team leader will be responsible for reviewing grantee records, procurement procedures and grant management procedures in the grantee's office. The other team members will concentrate on the project field records, construction management procedures, and physical construction.

Prior to the CME, the Team leader is responsible for notification and coordination with the State, Grantee and CoE. He is also responsible for all logistic arrangements. Following the site visit, he is responsible for the preparation and distribution of the CME Report. He also has the responsibility to assure that all action items have been appropriately responded to.

II. PROJECT MANAGEMENT CONFERENCE (PMC)

The PMC is held after the pre-construction conference and preferably prior to initiation of construction. The purpose is to provide detailed guidance and instructions to the grantee in overseeing and managing his construction grant. If applicable, the CoE is well suited to conduct this conference.

The PMC begins with a briefing in the grantee's office attended by the State representative and/or CoE representative (if applicable), members of the grantee's staff, representatives of the architect-engineer organization and other appropriate members of the construction management team.

The Team Leader will explain the statutory requirements and regulations, reporting and record-keeping requirements, construction management functions, overall grant management procedures and any special grant conditions. These areas are discussed in detail in the sections of this manual under CME's. However, in order to provide a ready reference for those who will be conducting PMC's, they are also listed below. For a detailed discussion of many of these activities, reference should be made to the CME sections.

A. Grant Management

1. Statutory and Regulatory Requirements
2. Grant requirements, including special grant conditions
3. Procurement procedures
4. Property control
5. Resident services required during construction
6. Record-keeping system
   a. Provide a clear audit trail
   b. Subsidiary ledger for each grant
   c. Allowable/Unallowable and direct/indirect cost segregation
   d. Force account work documentation
   e. Small purchase documentation.
   f. Change orders, complete documentation.
   g. Request for payments, documentation and back-up required
   h. Claims, complete record of all actions taken by all parties
   i. Correspondence control - complete, chronological
7. Project closeout and project performance certificate

B. Construction Management

1. Grantee responsibilities and authority
2. A/E responsibilities and authority
3. Contractor responsibilities and authority
4. A/E resident organization
5. Construction conformance with Plans and Specifications

6. Inspectors daily log
7. Material testing Requirements
8. Construction schedule
9. Progress Payments
10. Davis Bacon, Copeland, EEO
11. Change order procedures
12. Claims procedures
13. Shop drawings, procedures and documentations
14. As built drawings, keep current
15. Correspondence (choronological file)

III. CONVENTIONAL CME

The CME begins with an entrance briefing at the grantee's office attended by the review team, grantee office and field representatives, a Corps of Engineers representative (if applicable), a representative of the architect-engineer organization, a contractor representative and others, as desired by the grantee. The team leader will begin the meeting by reviewing the reason for the evaluation and explain the scope and goals of the evaluation. After a brief introduction of the team members and a description of their functions, a tentative schedule of team activities will be discussed to insure that key personnel from the grantee's office and field staffs will be available for coordination with team members at mutually convenient times. The team members will try to work around the grantee's established schedules as much as possible to minimize any disruptive effects that the CME might have. The team leader should also schedule the exit briefing before adjourning this meeting.

The grantee representatives should briefly describe their organizational structure, the project's status and work schedule, the contractor organization, the construction oversight and inspection programs. Work space and key personnel for contact by team members will be designated at this time by the grantee.

After completion of the entrance briefing, the CME team will tour the grantee's office, locate the filing system and be introduced to the individual contact for each part of the team's review. The team will then be shown to their designated work area in the grantee's office. Following this orientation, the grantee representative will accompany the CME team on a visit to the construction site and the resident engineer's office. During this time, the team will have a chance to get a brief overview of the construction in progress. Following this, the team will return to their designated work area to begin their individual tasks.

A. GRANT MANAGEMENT

The team leader will evaluate the grantee's compliance with the grant requirements, the procurement procedures and the grantee's record keeping system.

1. Grant Requirements

The team leader will specifically check on the grantee's compliance with two groups of grant requirements. The first group is comprised of requirements which all grantee must meet, such as the requirements dealing with the Operations and Maintenance Manual, a sewer use ordinance, user charges, an infiltration and inflow survey, a sewer system evaluation survey, staffing, plan of operation, a pretreatment program,

flood insurance, and service agreements (where there is more than one municipality). The second group is composed of special grant conditions or requirements which have been made a part of individual grants.

The team leader must carefully scrutinize the role the grantee plays in seeing that these requirements are met. In the past, CME's have revealed that some grantees do not have firsthand knowledge of grant requirements and their responsibilities under the grant. This is particularly true when grantees rely on other parties to assume these responsibilities. This can lead to serious problems, such as withheld grant payments when certain grant requirements are not met or are not met on a timely basis.

2. Procurement Requirements

The team leader must be knowledgeable of all EPA construction grant regulations and related procurement procedures. He must thoroughly review all grantee documents pertaining to engineering and construction contracts to determine if all of the applicable provisions of 40 CFR Parts 33 and 35 are being met. The grantee's procurement systems should be reviewed to determine that contracts with engineer and contractors are of the proper type and that the required EPA regulations have been followed for evaluation and selection.

3. Accounting Systems

The team leader will make a thorough review of the grantee's accounting system. Experience shows that there are four major problem areas which a significant number of grantees encounter. These areas should be given special attention. The four problem areas are:

(a) Failure to separate eligible and ineligible costs and/or allowable and unallowable costs.

(b) Failure to segregate project costs between different grants and/or steps.

(c) Failure to develop written procedures for handling accounting, and

(d) Failure to adequately justify and record total Federal reimbursements.

Other areas of concern include force account work, poor or missing records, and the lack of documentation relating to time and compensation for construction inspectors.

B. CONSTRUCTION MANAGEMENT

This phase of the CME will be conducted primarily by the team members with assistance from the team leader. The team leader will help review construction records after the grant requirements and procurement procedures have been reviewed. The team will spend most of their time evaluating construction management rather than the acutal construction work. A CME is not intended to be a thorough review of construction. Rather, it provides EPA with an insight into the way grantees are handling grant and construction management, not with detailed knowledge as to the quality of construction being performed. The EPA interim inspection program, performed largely by the CoE, monitors and safeguards the quality of construction.

The following listed items have been identified as recurring problem areas in previously conducted CME's. These areas are also closely related to the fiscal aspects of the project, as well as the progress of construction. They should, therefore, be given close scrutiny during the review.

1. Change Orders

The change order review begins with an evaluation of the number of change orders that have been issued and their relative costs. Most large changes plus a few small changes should be selected for detailed review. It is noted that the number of change orders that can be expected at the time for the CME depends on the status of construction, size of project, complexity of design, the quality of the contract plans and specifications and the contractors performance. The change orders selected for review should be checked to determine if they are supported by the following:

a. Evidence of the need for change

b. Screening process

(1) Change order request is documented
(2) Funding is properly certified and authorized
(3) Prior approval, if appropriate
(4) Description of change
(5) Justification for change
(6) Change to contract price, time of completion
(7) Approvals

c. Reasonableness of the method of accomplishing the objective
d. Eligibility of the change
e. Allowability of costs
f. Specific documentation of the actual change order

(1) An independent engineering estimate

(a) Prepared by the consulting engineer with
(b) Reasonable accurate estimated of quantities, and
(c) Detailed cost and pricing data

(2) A summary of negotiation, including the

(a) Basis for the independent estimate and the
(b) Basis for the contractor's estimate, including

(1) Steps taken in review
(2) Explanation of differences, and
(3) Adequacy of the estimate

(c) Results of price negotiation
(d) Basis for the method of payment

2. Claims

It is very important that the grantee provide timely acknowledgment of claims and that all known facts concerning claims be well documented. A spot check should be made to determine the validity of the claims. The probability of the contractor successfully pursuing the claims, possible amounts of such claims, and reasons for such claims should be evaluated. The grantee's position in any claim action that is not well documented is weakened because memories can fade, personnel can change, and facts can be more easily disputed than can timely, well-documented, written records.

3. Progress payments

Review of progress payments for larger projects is usually limited to an explanation of procedures by the grantee and a review of monthly payments to insure that these procedures are being followed. The standard procedure used for processing progress payments begins with a submittal from the contractor containing an estimate of work completed during the previous month. Such an estimate is usually divided into many line item entries for various phases of work and includes any invoices or other documentation that are required. The inspector for the grantee who is most familiar with a certain line item entry will then make an independent review of work accomplished. The inspector should be able to verify quantities of work performed or materials consumed by referring to the daily inspection reports. If the contractor's estimate and the inspector's review agree, the contractor is paid the mutually agreed upon amount for that particular line item. Any disagreement on estimates is

negotiated, with the burden for justifying estimates falling on the contractor. When a project nears completion, the grantee should estimate how much money is required to complete the job, and then insure that the amount needed, plus a reasonable contingency, is retained to cover future work and any known deficiencies.

4. Progress Schedules

Progress schedules and their appropriate updating are important on every project, in order that both the contractor and the resident engineer are aware of the contract status. In the event a project falls behind schedule, early recognition of this fact is essential so that the Contractor and Resident Engineer can plan any additional effort that may be required to regain the schedule.

It would appear that the normal provision that allows the grantee to assess liquidated damages against the contractor, if the contractor does not complete the job on time, would provide the incentive for the contractor to finish on schedule. Unfortunately, when a project does fall behind schedule, there are usually many factors to consider that can be the result of both contractor and grantee actions, making it difficult to obtain a clear determination of responsibility for delay. Therefore, the resident engineer must insist on appropriate schedule updating and do all that is contractually possible to encourage the contractor to maintain the schedule. Unless such a course is pursued, the grantee risks nullifying the "time is of the essence" and liquidated damages clauses.

5. Inspection Reports

Inspection reports are of utmost importance on any construction project because they represent the observations of the person closest to the work and are timely documentations that do not rely on memory. They are essential to the grantee in settling disputes with the contractor. Also, the report can be an effective tool as a basis for preparing deficiency lists when the project or major phases of the project are nearing completion. A spot check of inspection reports should include verification that daily logs are being maintained, day-to-day deficiencies and problems are being noted, discussions with contractor personnel are being recorded, and notations are being made on any follow-up action taken on previous comments. The daily inspection reports should also contain reference to quantities of work performed and materials consumed. These reports may then be used to compute progress reports. The CME team should determine if noted deficiencies which could be concealed by future work are being corrected in a timely manner and properly documented.

6. Shop Drawings

A spot-check of the technical adequacy of shop drawings, compared to contract documents, is made as a part of the construction review by the team. The team should also check the method of processing, filing and distribution of drawings to assure that construction delays have not been caused by deficiencies in the system.

7. As-Built or Record Drawings

An evaluation of the as-built drawing procedures should be made to assure that the as-builts are kept current. This can be done by comparing known changes with as-builts to see if the changes are, in fact, being added to the drawings. Particular attention should be given to those items which are changed and are concealed by future work, such as underground utilities.

8. Correspondence

It is important that any correspondence from the contractor be answered in a timely manner and that any decisions by the resident engineer concerning problems, clarification, discussions with the contractor, etc., be documented. The correspondence file and resident engineer logs should be spot-checked to obtain a general idea of how well the resident engineer is documenting management of the contract. Such documentation can be by letter or memo to the contractor or by an entry into the resident engineer's daily log. It is suggested that any documentation that addresses decisions involving significant items of work be in the form of a letter to the contractor. The general filing system should also be reviewed to assure that a logical and usable system is being employed.

9. Labor Requirements

An inspection of the contractor's facilities should be made to determine that normal requirements for posting certain information are being met. Such items as the applicable wage poster and wage determinations, equal employment opportunity notices, and OSHA regulations must be posted in such a manner as to afford any employee the opportunity to review such material.

10. Organizational Requirements

The team has the responsibility of evaluating the adequacy of the resident engineer's organization as well as that of the contractor. The record keeping system of both

should be reviewed. Other areas in which problems may occur are staff and organizational structure.

11. Material Testing & Certificates

A check into the resident engineer's material testing file should be made to determine if adequate testing records and documentation are being kept. Special emphasis should be placed on soils, concrete, pipe, rebars and welds.

C. GRANTEE EXIT BRIEFING

The CME concludes with an exit briefing at the grantee's office. The briefing should be attended by the same personnel who were present at the entrance briefing, minus the contractor representative. The team leader begins this meeting by discussing the findings, recommendations, and conclusions of the CME. After the team leader has finished the CME summary, the parties involved will be given an opportunity to discuss the findings, recommendations, and conclusions with the individual CME team members.

The team leader should clarify that the CME findings presented in this meeting will include the significant comments to appear in the written report. However, additional details may be added to the final CME report as appropriate.

The exit briefing is an opportunity for the grantee to benefit from the experience and knowledge of the CME team, asking questions and commenting on the CME findings. Ideally, this meeting should be conducted in such a manner as to promote a positive and open atmosphere which will stimulate constructive criticism from all interested parties. All CME team members must be prepared for this meeting by having, at least a rough draft of their findings. These findings need not be in final form, but they must be sufficiently complete so that the final report can be easily prepared from them. By discussing these findings with the grantee, any inconsistencies or omissions will be corrected. The exit briefing will also assist the grantee by providing an opportunity to go into the actual details behind the findings and recommendations.

IV. EXTENDED CME

A. GENERAL

The extended CME is intended for large multiple contract projects designated by a Regional Office as appropriate for an in-depth review of construction grant management procedures. These five to ten day reviews are conducted by a four to five member team fully experienced in on-site review techniques and knowledgeable of EPA regulations and policies. The designated team leader will be from the EPA Regional office. Each team member will have specific assignments and the team leader will determine the amount of time allocated to complete these assignments.

The team structure will include the Regional Program Manager-Team Leader and two to three experienced Team members from the State and CoE, who will be assigned particular areas of responsibility. The Team will further include personnel from the Office of Audit, either initially assigned as Team members or on call, as needed. The Team Leader assumes complete responsibility for control of the Team. He shall make the assignments and, in general, shall be the Team member who reviews project records in the grantee's office.

The scope of Review Team's actions in the field will include an entrance briefing for the grantee, a review of the grantee's financial management system and record-keeping procedures in the grantee's office, a field review of construction operations and work in place, a review of the construction management system and procedures in the resident engineer's field office and an exit conference with the grantee. In addition to those things described under a conventional CME, the following will be reviewed.

B. GRANT MANAGEMENT

The elements of the grantee's financial management system shall be discussed from the viewpoint of his organization, the procurement system, the existing or proposed user charge system, the property control system, the local share funding procedures and accounting system and the grantee's record-keeping system. The financial management system will be reviewed by the Team Leader and the audit representative using the "Financial Management Checklist", Appendix C of this manual.

1. Grantee Organization description shall include the official name of the grantee, his address and official telephone number and a short description of the organizational structure with names of key personnel. The description shall also include the definition of the service area, the community served and the service

responsibilities incumbent on the grantee. The principal facilities owned and operated by the grantee's wastewater treatment organization shall be described including the capacities and locations and functions of each major facility. Principal agreements with other legal entities shall be described and their current status should be assessed insofar as possible.

2. Procurement System of the grantee for architect-engineering services shall be described, including commentary on its effectiveness. The grantee's procurement system for construction contracts shall also be described with an analysis of the grantee's policy regarding conformance to Federal procurement procedures as required in EPA regulations. The following documents, as a minimum, should be reviewed. Advertisement for Bids, Bid Tabulations, Low Bid, and Notice to proceed.

3. User Charge programs of the grantee, either existing or proposed, shall be discussed from observations made during the review. Particular elements to receive attention shall include the grantee's authority for imposing user charges, the schedule of charges and surcharges, any special service agreement with other legal entities. The sewer use ordinance used by the grantee shall be reviewed for adequacy in accordance with the guidelines. Any infiltration/inflow work in progress shall be described and related to the schedule for its applicability and for its necessity.

4. Property Control System for the grantee's real property shall be reviewed for its existence and its applicability to both easements and fee title property. The Team shall discuss whether the grantee has the right of eminent domain, whether he has the capability to make realistic appraisals to negotiate with landowners effectively, whether documentation is complete and legally filed, as required, and the location of the filed documents.

5. Local Share Funding shall be identified as being planned, being available, or having been obtained. Bond issues or short-term financing of the local share of project costs shall be described. Budgets, outlay schedules and cash flow projections which contain funds for local share obligations shall be discussed.

Discussion of bond issues shall include the level of current long-term indebtedness and limits on bonding authority. The handling of funds received from the sale of bonds or borrowed on a short-term basis for local share payment shall also be discussed.

The Report shall note the frequency of audits and the basis upon which each one is performed. Disclaimers by the auditors shall be particularly mentioned and the reason for each shall be justified.

The discussion of budgets and associated financial planning documents shall include reference to special funds or reserves for debt retirement.

6. Record-keeping System review shall include the project file for all grant agreements and other documentation such as advertisements, bid tabulations, proper federal and state approvals, recommendation for award, executed contracts, valid bonds, required insurance coverage and other required documentation. The review of periodic payment estimates and change order descriptions shall include completeness of documentation, proper format and compliance with EPA regulations.

Direct purchases and other charges to the project shall be analyzed for their allowability and the proper establishment of their value. The track of EPA payments shall be reviewed through the grantee's accounting documents to determine if proper controls have been applied at each stage.

The Team Leader shall have the responsibility to review the grantee's cost accounting system. However, should an auditor be a member of the team, he will be assigned this tasks.

No effort will be made to perform a formal fiscal audit of the grantee's records. The purpose of this review is to check for an audit trail and determine that a proper usable accounting system is in place and being properly used and maintained.

C. CONSTRUCTION MANAGEMENT

The construction records are the source documents for the history of the project and all actions that have been taken during the course of its construction. These records should be reviewed to the extent deemed unecessary by the team. A list of typical construction records is contained in Appendix E.

1. Plan and Specifications will be reviewed so that the team becomes familiar with the construction aspects of the project. This knowledge will be used to determine that the project is being constructed in accordance with the approved plans and specifications.

2. Compliance with Approved Plan - The Facility Plan should be reviewed to assure that the project is in compliance with the plan. If it is not, an explanation and justification must be provided by the grantee.

3. Resident Engineer and Inspector Organization should be monitored from the standpoint of their demonstrated technical competence.

4. Shop Drawings delivery and storage systems shall be review. The Report shall comment on the checking procedures including the system and levels of responsibility of the checkers, and the mechanism for informing the contractor and owner of approvals and disapprovals.

5. Construction Schedule requirements and required format shall be discussed. The responsibility for creating, updating and using the schedule to control construction progress shall emphasized.

6. Correspondence Control shall be evaluated from the copies retained in the field office. Mention should be made of the correlation between level of authority and the subject of each piece of correspondence. Storage facilities and a control system such as a correspondence log shall likewise be evaluated.

7. Pay Estimate Documentation shall be reviewed, special attention should be given to the method of preparation and the basis for establishing quantities and prices by which the work is paid.

8. Inspection Reports discussions shall center on the inspector's daily reports and any official diaries which may supplement them. They shall be analyzed for completeness and timeliness. Their use for job control shall be described.

9. Change Orders and the documentation to supplement them shall be thoroughly reviewed, including the methods for negotiating change orders. Procedures for handling change orders over $100,000 shall be separately analyzed.

10. Materials Testing Documentation shall be reviewed including the types of tests, the recored of tests, the schedule of quotas for materials testing, the use of outside materials testing laboratories and the use of tests to reject materials and work. Special attention should be given to corrective action taken when tests fail. This action must be completely documented.

11. Davis-Bacon, Copeland, EEO requirements to be met at the construction site shall be reviewed and any violations shall be noted.

12. Other Topics to be mentioned in the Report include the presence and requirement for an Operation and Maintenance Manual, copies of OSHA regulations available on the site, the posting and enforcement of proper emergency procedures, the posting of emergency telephone numbers and the presence of the required trade permits and waterways encroachment permit requirements.

D. EXIT BRIEFING

Briefing shall be as described under Conventional CME. The format for the briefing is included as a part of Appendix A.

V. THE REPORT

A. GENERAL

Upon completion of the on-site evaluation, a formal report will be prepared. A final draft should be ready within one week after leaving the site. The final report should be issued within one month. The report will be a self-contained document which details the evaluation and its results. The team leader is responsible for writing and issuing the final report. Based on past experience, a typical report will average 10 to 20 pages.

It is suggested the report be divided into five major parts and necessary appendices. These five parts are the Introduction, Grant Management, Construction Management, Action Items and Conclusion. Any backup information needed to clarify or support the main body of the report should be included in the Appendices.

B. INTRODUCTION

The introduction provides an opportunity to describe the grantee organization, the purpose of the CME and the scope of the evaluation. A reader should be able to understand the whole CME program by reading the introduction to any individual CME report. The description of the grantee must be in sufficient detail for a reader to compare the particular grantee being evaluated with other grantees. As such, the description must include all pertinent items regarding the grantee, including the population served by the project, the physical layout of treatment plant, the type of management system utilized, the number of contracts as well as the dollar value of each and the project status at the time of the CME.

C. GRANT MANAGEMENT

This part of the report can generally be divided into four sections: project record control, accounting system, grant requirements, and recommendations. In some cases a separate section on procurement procedures may be desirable.

The section on grant requirements may be set up in a tabulated fashion. All the grant requirements that are checked should be discussed in the tabulation. If the grantee failed to meet any of these requirements or if there is a strong possibility the grantee will be unable to meet requirements in the future, then this fact and the problem behind it should be discussed in this portion of the CME report.

The recommendations section is intended to benefit and provide guidance to the grantee. The recommendations must be specific, detailed, and tailored to the needs of the individual grantee. If the recommendations are acted upon by the grantee, they should remedy problems that the grantee may be having with grant management. Recommendations will be viewed as advice while the ACTION ITEMS part of the CME report will be viewed as a mandate.

D. CONSTRUCTION MANAGEMENT

This part of the report is best separated into three sections: construction management, construction review, and recommendations.

The construction management section may be divided into subsections such as change orders, progress payments, progress schedules and the like. Each of the subsections will summarize the team findings with respect to that area and list any deficiencies noted. These subsections should not be cluttered with unnecessary detail. They need to be short and to the point, but still detailed enought to allow a reader to find the grantee's strengths or weaknesses in a given area.

The construction review section should give a brief description as the the quality of work being performed. If any problems were observed with respect to the quality of construction work, then the team engineer should note these. When such a situation occurs, the team leader should include extra documentation in a separate appendix and provide greater detail than usual for this section.

The recommendations section should be designed in the same way as the grant management part of the report.

E. ACTION ITEMS

This probably is the most important part of the written CME report. It outlines actions to be taken, which if followed, will correct deficiencies noted as a result of the CME. The action items should be divided into three distinct sections.

The first section will include all action items required of the grantee, and will be divided into two subsections: (1) those actions which the grantee must personally implement, and (2) those actions which the grantee will have consultants or contractors implement. An example of the former would be a change in the grantee's accounting system. An example of the latter would be requiring the contractor to update or revise a construction schedule.

The second section will include all Agency action items which must be taken by the State Environmental Agencies. An example of such an item would be the same as any Regional EPA action item where the State had received delegation in the area.

The third section will include all action items which need to be taken by the Regional EPA Office. An example might be a requirement for an adjustment in progress payments.

F. CONCLUSION

The conclusion is a short final statement with respect to the project as a whole. It should state a conclusion as to the overall quality of the grantee's management. The team leader should be given discretion in deciding what should be included in this section.

APPENDIX A

GRANTEE NOTIFICATION PACKAGE
FOR
CONSTRUCTION MANAGEMENT EVALUATIONS

The items listed below make up the notification package to the grantee. Samples of these documents are included as a part of this appendix. They should be tailored to each individual grantee and sent to the grantee at least two weeks prior to the scheduled date of the CME.

Sample Grantee Notification Letter	A-2
Schedule for Review and Briefings	A-3
Outline of Construction Management Evaluation Review Topics	A-4
Documents and Facilities Required from Grantee	A-5
Outline of Entry Briefing at Grantee's Office	A-6
Outline of Exit Briefing at Grantee's Office	A-7

SAMPLE GRANTEE NOTIFICATION LETTER

(Address)

Dear --

This is to confirm that there will be a Construction Management Evaluation (CME) of your construction grant project from (date) to (date) inclusive.

The following enclosures have been attached to assist in your preparation for the field visit:

Schedule for Review and Briefings

Outline of CME review topics

Outline of Entry Briefing at Grantee's Office

Documents and Facilities Required from Grantee

Outline of Exit Briefing at Grantee's Office

The primary purpose of the visit is to provide an overview of the management of the construction phase of the construction grants program. It should be emphasized that this project has been selected because it is part of a sampling of projects representing a cross-section of the construction grants program. No suggestion of improprieties can be inferred from its selection.

Your assistance in providing access to project documentation and working space for the Review Team will be appreciated. It is anticipated that Team Members will require consultation with your staff, your A/E's field personnel and construction contractor personnel. These interviews will be scheduled during the Entry Briefing. Your cooperation during the field visit will be appreciated and the Review Team has been instructed to respect your normal working schedule insofar as possible.

Questions should be directed to (name), Project Officer, at (telephone number).

Sincerely,

(signature)

SCHEDULE FOR REVIEW AND BRIEFINGS

(Day and date)

10:00 AM - Entry Briefing with Grantee at Grantee's Office

1:00 PM - Escort of Team by Grantee, Orientation Tour of Construction Sites, Storage Site(s), Work Spaces, Introduction/Arrangements with Conferences

(Day and date)

8:00 AM - Team Members Begin Concentrated Effort on Assigned Areas

(Day and date through Day and date)

8:00 AM - Team Members Work on Assigned Areas

(Day and date)

8:00 AM - Team Members final Preparation for Exit Briefing

(Day and date)

9:00 AM - Exit Briefing with Grantee

PM - Team Travel

OUTLINE OF CONSTRUCTION MANAGEMENT EVALUATION REVIEW TOPICS

1. Grant Management

   a. Grantee Organization
   b. Procurement System
   c. User Charge/Industrial Cost Recovery
   d. Property Control System
   e. Local Share Funding
   f. Record-keeping System
   g. Facility Plan
   h. Claims

2. Construction Monitoring

   a. Preliminary Work
   b. Work Quality Assurance (Summary)
   c. Resident Engineer and Inspector Organization
   d. Contractor Organization
   e. Work Performance

3. Construction Records

   a. Plans and Specifications
   b. Shop Drawings
   c. Construction Schedule
   d. Correspondence Control
   e. Pay Estimates Documentation
   f. Inspection Reports
   g. Change Orders
   h. Material Testing Documentation
   i. Davis-Bacon, Copeland, EEO
   j. Other

DOCUMENTS AND FACILITIES REQUIRED FROM GRANTEE

1. Documents to be Furnished by Grantee

   a. Contract Drawings
   b. Specifications
   c. Change Order File
   d. Claims File
   e. Payment File
   f. A/E Contract(s)
   g. Construction Contract(s)
   h. Grant Agreement(s)
   i. Organization Chart with Telephone Numbers
   j. A/E and Contractor Organization Charts with Telephone Numbers
   k. Project Schedule
   l. Resident Engineer(s) Reports
   m. Shop Drawings
   n. Correspondence File
   o. Records of Testing
   p. Payroll Records
   q. Permits and Certificates
   r. Operation and Maintenance Manual (if prepared)
   s. Shop Drawings

2. Team Facilities Required

   a. Work space in A/E site office(s) accessible to field files
   b. Work space in Grantee's office accessible to Grantee files

ENTRY BRIEFING WITH GRANTEE

Grantee's Office

A. Attendees

Grantee - Chief Executive
Principal Staff Engineer
Principal Staff Financial Representatives
Other (Grantee option)

A/E - Project Manager
Project Resident Engineer
Chief Inspector
Other (Grantee option)

Contractor - Construction Superintendent

R.O. - Project Officer (if not delegated)

State - Project Officer (where delegated)

CME Team

B. Tentative Agenda

CME Team Leader - Introduction, Purpose/Objective, Schedules
- Team Member

Grantee - Discuss the following:

- Description of Construction Inspection and Supervision Arrangements
- Briefing of Institutional Arrangements, Statutory Authority, Regional Agreements
- Overview of Project Status, Financing, Schedule
- Designate Grantee Principal Contacts, Work Spaces

C. Grantee Escort of Team on Orientation Tour, PM

- Construction Site(s)
- Storage Site(s), stockpiles, and Off-site Plants
- Field offices
- Other

EXIT BRIEFING WITH GRANTEE

Grantee's Office

A. Attendees

Same as Entry Briefing, Except:

- Minus Construction Superintendent

B. Tentative Agenda

CME Team Leader
- Highlights of Favorable Findings
- Highlights of Unfavorable Findings
- Recommendations
- Probable Thrust of Final Report

Grantee
- Observation on Exit Briefing
- Comments, Questions, Discussion of any findings or observations of the review team

APPENDIX B

TYPICAL REPORT OUTLINE

PART I Introduction

A. Purpose
B. Scope
C. Grantee

1. Organization
2. Construction Grant
3. Construction Project

PART II Grant Management

A. Record Control

1. Project Filing System
2. Manner of Organization

B. Procurement Procedures

1. Engineering Services

a. Maximum Open Technical Competition
b. Types of Contracts
(1) Cost of Percentage of-cost
(2) Percentage-of-construction-costs
(3) Cost Reimbursement
(4) Fixed Price
(5) Per Diem
c. Responsible Engineer Capable of Performing
d. Contract Clearly Defining Scope of Service
e. EPA Transition Policy - Appendix D
(1) Prior to July 1, 1975 - Existing contracts
(2) July 1, 1975 to December 17, 1975 - Negotiated on current cost and pricing data
(3) After December 17, 1975 - Provision of 40 CFR 35-937 Subagreements for A/E services
(4) December 17, 1975 - February 1, 1976 - RA can excuse announcement and selection procedures
f. Access to Records, Appendix D, required after July 1, 1975.

2. Construction Contracts

   a. Competitive Bidding w/Public Notice and Adequate Time
   b. Type of Contract
      (1) Lump sum
      (2) Unit price
      (3) Combination
   c. Bidding Documents
      (1) Statement of work
      (2) Terms and Conditions of Contract
      (3) Explanation of Method of Bidding
      (4) Bid Evaluation Requirement and Criteria
      (5) Sealed Bids
   d. Lowest Responsive, Responsible Bidder
   e. EPA Approval
   f. Eligible/Ineligible Items

C. Cost Accounting Systems

D. Grant Requirements

1. User Charge -35.925-11 and 35.935-13

   a. Status
      (1) Evidence of Timely Development - 50 percent Grant Payment
      (2) System Approval - 80 percent Grant Payment

2. Industrial Cost Recovery (ICR) - 35.925-11 and 35.935-15

   a. Status
      (1) Class deviation at 45 FR 81576, December 11, 1980, eliminates all industrial cost recovery requirements back to December 27, 1977.

      (2) ICR payments due to EPA prior to December 27, 1977, on grants awarded after March 1, 1973, are still required.

3. Sewer Use Ordinance 35.927-4 and 35.935-6

   a. Status
      (1) Ordinance Approval - 80 percent Grant Payment

4. Sewer System Evaluation and Rehabilitation 35.927-5 and 35.935-16

a. Status
   (1) Compliance with Rehabilitation Program 80 percent Grant Payment

5. Operation and Maintenance Manual 35.935-12

   a. Status
      (1) Draft or Timely Development - 50 percent Grant Payment
      (2) Manual Approval - 90 percent Grant Payment

E. Recommendations

1. Listing of Specific Recommendations
2. Recommendations Should be Impersonal

PART III Construction Management

A. Construction Records - Overall Statement

1. Plans and Specifications

   a. Comprehensiveness of Review
   b. Plans - Some significant Points
      (1) Site Layout Compared to Tour of Site
      (2) Wastewater & Sludge Flow Diagram
      (3) Hydraulic Profile
      (4) Structures Compared to Site Layout
      (5) Process Equipment
   c. Specifications - some Significant Points
      (1) Liquidated Damages
      (2) As-built Drawings
      (3) Time of Completions
      (4) Construction Schedule
      (5) Contract Price Breakdown
      (6) Payment estimates
      (7) Change Orders

2. Construction Schedule

   a. Types of Schedules
   b. Primary Concern - On Schedule or Not?
   c. Secondary Concern - Will Construction Remain on Schedule?
   d. Indicators of Future Trouble
      (1) Construction Schedule Has Not been Updated Recently

(2) Little Evidence of Contractor's Advance Planning
(3) Shop Drawing Submittal Is Slow
(4) Numerous Scheduling Conflicts

e. Reason for Slow Construction Progress
(1) Poor Bidding
(2) Poor Planning
(3) Acts of God
(4) Financial Expedience

f. Behind Schedule Actions
(1) Warning Notice to Contractor
(2) Requirement for Interim Make-up Schedule
(3) Liquidated Damages Reminder

g. Consequences of Ignoring Construction Schedule

3. Payment Estimates

a. Method of Preparation
(1) Submitted by Contractor to Resident Engineer
(2) Reviewed and Adjusted by Resident Engineer
(3) Negotiated with Contractor
(4) Estimate Certified by Resident Engineer
(5) Estimate Submitted to Grantee

b. Documentation Required
(1) Unit Price Contract
(2) Lump Sum Contract
(a) Contractor's Breakdown
(b) Resident Engineer Quantity Records
(c) Stored Material Records

4. Change Orders

a. Reviewed Individually
(1) Type of Change Order
(a) Unit Price Previously Agreed
(b) Unit Price Negotiated
(c) Agreed Lump Sum
(d) Cost Reimbursement
(2) Purpose
(3) Justification of Need

b. Management Elements
(1) Independent Engineering Cost Estimate
(a) Prepared by Consulting Engineer
(b) Reasonably Accurate Estimate of Quantities
(c) Detailed Cost and Pricing Data
(d) Published Estimating Handbook
(e) Informal Local Quotations
(f) Advice from Experts
(2) Summary of Negotiations
(a) Basis for Independent Estimate

(b) Basis for Contractor's Estimate
(c) Steps Taken to Review
(d) Explanation of Differences
(e) Adequacy of Estimate
(f) Results of Price Negotiation
(g) Basis for Method of Payment

(3) Time Extension
(a) Approvable for Extra Work Impacting Critical Path
(b) Not Approval for Float Time Elements
(c) Documentation Required
i. Independent Cost Estimates
ii. Summary of Negotiations
iii. Justification for Time Extension

5. Shop Drawings

a. Process Review
(1) Delivery
(2) Control
(3) Checking
(4) Approval

b. Process Delays
(1) Submittal-Indicative of Poor Schedule
(2) Grantee Review - Basis for Extension of Time Claim

6. As-Built Drawings

a. Engineering Agreement Requirements
b. Specification Requirements
c. Preparation
(1) What to Look For
(a) Currently Posted
(b) Sufficiently Detailed
(c) Contained in a Bound Set
(2) How to Evaluate Sufficiency
(a) Difficult
(b) Compliance with Specifications Provision
(c) Outside Underground Piping

7. Inspection Reports

a. Form
b. Detail
(1) Weather
(2) Work Performed
(3) Material Used
(4) Work Crew
c. Remarks
d. Quantities for Payment Estimate Documentation

8. Material Testing and Certificates

   a. Specification Requirements
      (1) Soils
      (2) Concrete
      (3) Reinforcing Steel
      (4) Pipe
         (a) Concrete
         (b) Steel
         (c) Cast Iron
      (5) Other Material

9. Labor Requirements

   a. Davis-Bacon Act
   b. Copeland Act
   c. EEO
   d. OSHA

B. Construction Work - Overall Statement

1. Inspection Organization
2. Contractor's Organization
3. Work Performance

C. Recommendations

1. Listing of specific Recommendations
2. Recommendation should be Impersonal

PART IV Action Items

A. Grantee
B. State
C. Regional Office

APPENDIX C

FINANCIAL MANAGEMENT CHECKLIST
for
CONSTRUCTION MANAGEMENT EVALUATION

A. General Project Information

1. Region
2. Grant Number
3. State
4. Review Date
5. Name of Grantee
6. Office Address
7. Mailing Address
8. Telephone
9. Chief Executive (Name & Title)
10. Designated Contact (Name & Title)
11. Jurisdiction
12. Project Location
13. Project Description

B. Grantee's Management Organization

1. Type of Organization
2. Authority for Establishment
3. When Established
4. Description of Service Area; Communities Served; Service Responsibilities
5. Description of Ruling Body
6. Appointing Authority
7. Terms of Appointment
8. Principal Manager
   a. Title
   b. Name
   c. Areas and Limit of Responsibility and Authority

9. Principal Financial Manager
   a. Title
   b. Name
   c. Areas and Limit of Responsibility and Authority

10. Principal Engineering Manager
    a. Title
    b. Name
    c. Areas and Limit of Responsibility and Authority

11. Principal Legal Counsel
    a. Title
    b. Name
    c. Areas and Limit of Responsibility and Authority

12. Organizational Chart
13. Principal Wastewater Facilities
14. Principal Regional Agreements
    a. Community
    b. Basis/term
    c. Special Agreements
        (1) Federal/State
        (2) Industry
        (3) Intermunicipal

15. Bonding of employees

C. Procurement System

1. A/E Services
    a. Procurement policies and procedures
    b. Types of contract
    c. Sub-contract procurement
    d. Sub-contract advance approval
    e. Review of contracts

2. Construction Contracts
    a. Procurement policies and procedures
    b. Standard grant clauses
    c. Time for completion/penalties
    d. Review of contracts
    e. Exclusionary or Restrictive Bidding Requirements

D. User Charges, Industrial Cost Recovery

1. Authority for Imposing Service Charges
2. Rate Schedules-Surcharges
3. Special Service Agreements
4. Industry Service Agreements
5. Cost Recovery Provisions P.L. 92-500
    a. Current Involvement
    b. Current Status
    c. Agreements-Basis
    d. Remaining Actions

6. Sewer Use Ordinance
    a. Legal status/adequacy
    b. Monitoring-Enforcement
    c. Industry Pretreatment-Prohibitions

d. Inflow Connections Portion
e. Plumbing Ordinance Compatibility

7. Infiltration/Inflow
   a. Analysis
   b. Survey
   c. Rehabilitation

E. Property Control System

1. Acquisition System
   a. Easements
   b. Titled Property

2. Right of Eminent Domain
3. Appraisals
4. Negotiations
5. Where Filed
6. Copies of Deeds Available
7. Property Insurance, Types, Amounts
8. Flood Hazard Insurance
9. Property Reporting to EPA R.O.

F. Local Share Funding

1. Bond Issues
   a. Bond Counsel
   b. A/E for Engineering Report
   c. Marketing Method-Experience
   d. Current Issues, G.O.? Rev.?
   e. Coverage
   f. Trustees-Trust Agreements
   g. Repositories
   h. Investments
   i. Debt Service Schedule
   j. Special Funds

2. Short-term Financing
   a. Purpose
   b. Terms-Source
   c. Special Funds

3. Synopsis of All Special Funds
   a. Purposes
   b. Restrictions
   c. Transfers

4. Annual Budget
   a. Operations Section
   b. Debt Service Section
   c. Other

5. Annual Financial Report
6. Audit
   a. Auditor
   b. Frequency
   c. Basis
   d. Report

7. User Charge System/ICR
8. Sewer Ordinance

G. Record Keeping System

1. Project Files
   a. Grant Agreement/Amendments
      (1) Step 1
      (2) Step 2
      (3) Step 3
   b. Bidding File
      (1) Advertisement
      (2) Tabulations
      (3) State/Federal Approvals
   c. Acceptance-Notice to Proceed
   d. Contracts-Bonds-Insurance
   e. Construction Schedule
   f. Construction Correspondence Control
   g. Periodic Payment Estimates
      (1) Ample Backup of Costs of Work Accomplished
      (2) Retentions
      (3) Payment Records
   h. Change Orders
      (1) Backup of Cost Produced
         (a) Change Notice
         (b) Change Estimate
         (c) Authorizations
         (d) Regional Actions
         (e) Cost plus percent-of-cost
   i. Direct Purchase
   j. Force Account By Grantee
   k. Other Charges to Project
   l. Track of EPA Payment
   m. Prompt Transmittal/Filing-shop Drawings, etc.
   n. Wage Rates - Furnished and Checked
   o. EEO

2. Cost Accounting System
   a. Audit Trail - cost track to project file
   b. Identifiable eligible/ineligible cost

c. Identifiable allowable/unallowable cost
d. Identifiable direct/indirect cost
e. Payments made-Retentions-Promptness
f. Grant Payments received
g. Direct Purchases
h. Controls
i. Etc.

APPENDIX D

CONSTRUCTION CHECKLIST
for
CONSTRUCTION MANAGEMENT EVALUATION

A. General Project Information

1. Region
2. Grant Number
3. State
4. Review Date
5. Name of Grantee
6. Office Address
7. Mailing Address
8. Telephone
9. Chief Executive (name & title)
10. Designated Contact (name & title)
11. Jurisdiction
12. Project Location
13. Project Description

B. General Construction Information

1. Principal Inspection Manager
   a. Title
   b. Name
   c. Areas and Limit of Responsibility and Authority
   d. Telephone

2. Inspection Staff
   a. Duties
   b. Names
   c. Areas and Limits of Responsibility and Authority

3. General Contractor Site Representative
   a. Title
   b. Name
   c. Areas and Limit of Responsibility and Authority
   d. Telephone

C. Plans Specifications and Contracts

The engineer will first thoroughly study the plans and specifications to familiarize himself with the project and to arrive at an understanding of the responsibilities and duties of the contractor.

The engineer will study the A/E contract to develop a clear understanding of the responsibilities of the owner, the A/E and the contractor. The relationship and authority of the three principal parties must be clearly understood by the engineer.

D. Conformance with Plans and Specifications

The engineer shall visit the construction site and physically inspect both the completed work and the work in progress. The following points will be emphasized:

1. Does the contractor appear to be well organized and efficiently pursuing the work?
2. Does the resident inspector exhibit technical competency, initiative; is he well organized and observant?
3. Is stockpiling of materials adequately protected, properly inventoried and readily accessible?
4. Does the quality of materials, both stockpiled and in-place meet appropriate standards?
5. Has the work in place been properly executed and is it visually acceptable?
6. Are health and safety measures adequate?
7. Is testing of materials being accomplished as required by the contract documents?
8. Treatment levels maintained during construction?
9. Are there procedures for properly controlling measured quantities?
10. Are the batch plants and manufacturing plants producing products which meet the specifications and are there proper control procedures?
11. Is the overall construction in conformity with the plans and specifications?

E. Resident Engineer and Inspector Organization

1. Name
2. Employer
3. Apparent qualifications
4. Staff
5. Procedures
6. Attendance at site

7. Change order control
8. Schedule control
9. P.E. opinion of contract drawings and specifications
10. Degree of dedication to project
11. Procedures for notifications to contractor
12. Relationship with Design Engineer
13. Authority (documented, to "act for" grantee, limitations, etc.)
14. Contractor-Engineer relations (friendly, fair, firm, businesslike and cooperative)
15. Inspector(s) personally knowledgeable, good judgment, responsible)
16. Plans and Specifications (reference set, marked-up, amendments, changes)
17. Progress Schedules (changes, slippages)
18. As-built drawings (set kept current for record)
19. Inspectors guidance (formal)

F. Contractor Organization

1. Name and Qualifications
2. Equipment (appear adequate in number and size for schedule and/or safety)
3. Personnel (sufficient for safe and efficient prosecution of the work)
4. Supervisory personnel (organizational ability)
5. Field Office and Shops (well placed, without safety or health hazard, adequately sized)
6. Storage area (well organized, protected)

G. Work Performance

1. Work in place (properly executed)

   a. Site
      (1) Appearance
      (2) Safety - security
      (3) Project Sign
      (4) Materials Storage
      (5) Dewatering - Drainage
   b. Foundation Work
      (1) Dewatering - Shoring
      (2) Piling
      (3) Material Consolidation
   c. Concrete
      (1) Appearance
      (2) Samples
      (3) Condition of Reinforced Steel - Steel Location

(4) Formwork - Bracing
(5) Curing Procedures
(6) Inserts
(7) Expansion Joints - Waterstops
(8) Contiguous Pours

d. Structures
(1) Masonary
(2) Steel Frame
(3) Substitutions
(4) Roofing

e. Mechanical
(1) Conformance
(2) Condition
(3) Installation
(4) Protection

f. Electrical
(1) Conformance
(2) Condition
(3) Installation
(4) Protection

g. Pipelines
(1) Materials
(2) Installation
(3) Testing

2. Safety (personnel, equipment and site)
3. Site drainage (adequate)
4. Dust control (maintenance of roads, stripped areas)
5. Erosion protection (in place and planned).

APPENDIX E
CONSTRUCTION RECORDS CHECKLIST
for
CONSTRUCTION MANAGEMENT EVALUATION

A. General Project Information

1. Region
2. Grant number
3. State
4. Review date
5. Name of grantee
6. Office address
7. Mailing address
8. Telephone
9. Chief executive (name & title)
10. Designated contact (name & title)
11. Jurisdiction
12. Project location
13. Project description
14. Reviewer

B. General Construction Information

1. Principal inspection manager
   a. Title
   b. Name
   c. Area and limit of responsibility and authority
   d. Telephone

2. Inspection staff
   a. Duties
   b. Names
   c. Areas and limits of responsibility and authority

3. General contractor site representative
   a. Title
   b. Name
   c. Areas and limit of responsibility and authority
   d. Telephone

C. Resident Engineer and/or Inspector Information

1. Employer
2. First arrived at project
3. Work hours
   a. Normal
   b. Authority to Work Overtime
4. Communications
   a. To Employer
   b. On-Site
5. Inspection equipment furnished
6. Office security
   a. Method
   b. Evidence of tampering
7. Inspector's library
   a. On-site office
   b. Manuals

D. Working Papers

1. Contract drawings and specifications
   a. Does inspector have approved set?
   b. Is superintendent working from approved set?
   c. Are changes being kept current by both parties?
   d. Are they supported by working sketches?
      (1) Source
      (2) Completeness
      (3) Administration
   e. Do subcontractors have sufficient sets?
   f. Are all contractors obligated to furnish as-built drawings?
      (1) In what form?
      (2) If not, who furnished?

2. Shop Drawings
   a. Delivery procedure
   b. Storage and filing system
   c. Approval system
      (1) Who has responsibility?
      (2) Mechanism
      (3) Turn-around time
      (4) Substitutions
      (5) Log
      (6) Ahead of deliveries?

3. Construction Schedule
   a. Is one required?
   b. Who prepares?
   c. Format
   d. Date furnished
   e. Conforms to specified completion?

f. Obvious conflicts
g. Who updates?
h. Agrees with partial payment request?
i. Up to date?
j. Reaction to delays
   (1) Inspector's actions
   (2) Superintendent's actions
   (3) Current status
k. Reflects stop orders, approved delays?

4. Requests for Partial Payments
   a. Frequency
   b. Who prepares and verifies
   c. Format
   d. Treatment of work in process
   e. Allowance for materials on site
      (1) Protection requirements
      (2) Determining value
   f. Subtrade documentation
   h. Treatment of specifically manufactured items

5. Force Account Records
   a. Force account used on what elements of project?
   b. Is RA preapproval documented?
   c. Format
   d. How are quantities kept and verified?
      (1) Labor
      (2) Materials
      (3) Overhead

6. Correspondence
   a. What level of correspondence can be initiated by project engineer for construction?
   b. With grantee
   c. With utilities
   d. With general contractor
      (1) Reasons
      (2) Actions ordered
      (3) Control procedures
      (4) Stop work orders
      (5) Other

7. Current Deficiencies
   a. Immediate action items
   b. Preliminary punch list
      (1) Is one being created?
      (2) Mechanism for adding an item
      (3) Is it current?

8. Spare Parts Inventory
   a. Are spare parts required?
   b. Is inventory being created?
   c. Who prepares?
   d. Is it current?
   e. Does it conform to specifications?

E. Job Records

1. Inspector's Daily Reports
   a. Is set complete to date?
   b. Do assistants have separate reports?
   c. Format
      (1) Complete heading
      (2) Record of construction activity
      (3) Record of quantities
      (4) Special instructions
      (5) Basis for change orders
      (6) Remarks on progress
      (7) On-site tests
      (8) Demonstrate methods of quantity control and measurements?
   d. Correlates with partial payment request
   e. Stop work orders

2. Diaries
   a. Are they kept?
   b. Can we inspect?
   c. Do they record measured quantities?

3. Change Orders
   a. Number
   b. Total value
   c. Is negotiation complete prior to initiation of change work?
   d. Procedures for change order over $100,000
   e. Amount by trades
      (1) Total each trade
      (2) Relationship to subbids
   f. Format
   g. Specification basis
   h. Completness of documentation
   i. Procedures for creation
   j. Appropriateness for costing method
   k. Reflection of quality of contract drawings and specifications
      (1) Interpretation of justification for each?
      (2) Is value realistic?

(3) Is there a contract provision for unilateral ordering of changes?
(4) Quality of A/E documents

l. Or-equal violations

m. Minor changes trade-off file
(1) Is there one?
(2) Is it formal/informal?
(3) Are trades consistent?
(4) Are trades shown on as-built drawings?

4. Records of Tests
a. Requirements clauses in A/E contract and/or specifications?
b. List from specifications
c. Conformance to schedule
d. Who pays for testing?
e. Names of testing laboratories/certification procedures
(1) Soils
(2) Concrete
(3) Pipe
(4) Rebars
(5) Welds
(6) Paint
(7) Other
f. Test results indicate need to inspect manufacturing plants?
g. Authority to reject materials
(1) Source
(2) Record of actions
(3) Frequency of rejections

5. Operation and Maintenance Requirements
a. Do manufacturer's manuals arrive at same time as equipment?
b. Are manufacturer's respresentatives available during installation?
c. Is a draft of O&M Manual available at site (note percent completion of project)?
d. Operator input to draft O&M Manual
(1) Reommendations
(2) Inventory
(3) Contacts with suppliers

6. Plant Operator Information
a. Has he/she/they been hired (note percent completion of project)?

b. License
   (1) State/local requirement?
   (2) Grade
   (3) Training in lieu of license
c. Does operator have conflicting duties?
d. Accountability for operator's time
e. Reporting responsibility
f. Staffing conform to staffing plan?

F. Documentation

1. Certificates
   a. Mill
   b. Pipe
   c. Guarantees register
   d. Other

2. Davis-Bacon and Wage Hour Law Requirements
   a. Secretary's determination
      (1) Posted
      (2) Correct rates

3. EEO Notice Posted?
   a. Weekly payrolls
      (1) Copies delivered
      (2) Conform to inspector's reports
      (3) Correct rates
      (4) Complaints about wage payments

4. Emergency Procedures
   a. Are signs posted?
      (1) Electric
      (2) Flammable
      (3) Ventilation
      (4) Dangerous liquids
      (5) Emergency showers
      (6) First aid equipment
      (7) Firefighting equipment
      (8) Breathing equipment
      (9) Chlorine tank repair equipment
   b. Telephone numbers posted?
      (1) Fire Department
      (2) Police
      (3) Utilities
      (4) Grantee
      (5) A/E
      (6) Contractor nights/weekends
      (7) Other
   c. OSHA Regulations
      (1) Available on site

(2) Accident records
(3) OSHA inspector comments

5. Permits
   a. Building
   b. Trades
      (1) Electrical
      (2) Plumbing
   c. Corps of Engineers
      (1) Waterways
      (2) PL 92-500, Section 404
   d. State requirements

6. Delivery Documents
   a. Concrete truck slips
   b. Copies of invoices
   c. Systematic filing
   d. Verification system
   e. Delivery control

G. Remarks